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<110> Genentech, Inc.

<120> BCMA POLYPEPTIDES AND USES THEREOF

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<140> 10/587,370

<141> 2006-07-26

<150> PCT/US2004/025247

<151> 2004-08-04

<150> US 60/540,271

<151> 2004-01-29

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<170> PatentIn version 3.3

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Pro Pro Leu Thr Cys Gln Arg Tyr Cys Asn Ala Ser Val Thr Asn Ser  
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Val Lys Gly Thr Asn Ala Ile Leu Trp Thr Cys Leu Gly Leu Ser Leu

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60

Ile Ile Ser Leu Ala Val Phe Val Leu Met Phe Leu Leu Arg Lys Ile  
65 70 75 80

Asn Ser Glu Pro Leu Lys Asp Glu Phe Lys Asn Thr Gly Ser Gly Leu  
85 90 95

Leu Gly Met Ala Asn Ile Asp Leu Glu Lys Ser Arg Thr Gly Asp Glu  
100 105 110

Ile Ile Leu Pro Arg Gly Leu Glu Tyr Thr Val Glu Glu Cys Thr Cys  
115 120 125

Glu Asp Cys Ile Lys Ser Lys Pro Lys Val Asp Ser Asp His Cys Phe  
130 135 140

Pro Leu Pro Ala Met Glu Glu Gly Ala Thr Ile Leu Val Thr Thr Lys  
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Met Leu Gln Met Ala Gly Gln Cys Ser Gln Asn Glu Tyr Phe Asp Ser  
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Leu Leu His Ala Cys Ile Pro Cys Gln Leu Arg Cys Ser Ser Asn Thr  
20 25 30

Pro Pro Leu Thr Cys Gln Arg Tyr Cys Asn Ala Ser Val Thr Asn Ser  
35 40 45

Val Lys Gly Thr  
50

<210> 22  
<211> 38  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> BMCA CRD (8-41)

<400> 22

Ser Gln Asn Glu Tyr Phe Asp Ser Leu Leu His Ala Cys Ile Pro Cys  
1 5 10 15

Gln Leu Arg Cys Ser Ser Asn Thr Pro Pro Leu Thr Cys Gln Arg Tyr  
20 25 30

Cys Asn Ala Ser Val Thr  
35

<210> 23  
<211> 285  
<212> PRT  
<213> Homo sapiens

<400> 23

Met Asp Asp Ser Thr Glu Arg Glu Gln Ser Arg Leu Thr Ser Cys Leu  
1 5 10 15

Lys Lys Arg Glu Glu Met Lys Leu Lys Glu Cys Val Ser Ile Leu Pro  
20 25 30

Arg Lys Glu Ser Pro Ser Val Arg Ser Ser Lys Asp Gly Lys Leu Leu  
35 40 45

Ala Ala Thr Leu Leu Ala Leu Leu Ser Cys Cys Leu Thr Val Val  
50 55 60

Ser Phe Tyr Gln Val Ala Ala Leu Gln Gly Asp Leu Ala Ser Leu Arg  
65 70 75 80

Ala Glu Leu Gln Gly His His Ala Glu Lys Leu Pro Ala Gly Ala Gly  
85 90 95

Ala Pro Lys Ala Gly Leu Glu Glu Ala Pro Ala Val Thr Ala Gly Leu  
100 105 110

Lys Ile Phe Glu Pro Pro Ala Pro Gly Glu Gly Asn Ser Ser Gln Asn  
115 120 125

Ser Arg Asn Lys Arg Ala Val Gln Gly Pro Glu Glu Thr Val Thr Gln  
130 135 140

Asp Cys Leu Gln Leu Ile Ala Asp Ser Glu Thr Pro Thr Ile Gln Lys  
145 150 155 160

Gly Ser Tyr Thr Phe Val Pro Trp Leu Leu Ser Phe Lys Arg Gly Ser  
165 170 175

Ala Leu Glu Glu Lys Glu Asn Lys Ile Leu Val Lys Glu Thr Gly Tyr  
180 185 190

Phe Phe Ile Tyr Gly Gln Val Leu Tyr Thr Asp Lys Thr Tyr Ala Met  
195 200 205

Gly His Leu Ile Gln Arg Lys Lys Val His Val Phe Gly Asp Glu Leu  
210 215 220

Ser Leu Val Thr Leu Phe Arg Cys Ile Gln Asn Met Pro Glu Thr Leu  
225 230 235 240

Pro Asn Asn Ser Cys Tyr Ser Ala Gly Ile Ala Lys Leu Glu Glu Gly  
245 250 255

Asp Glu Leu Gln Leu Ala Ile Pro Arg Glu Asn Ala Gln Ile Ser Leu  
260 265 270

Asp Gly Asp Val Thr Phe Phe Gly Ala Leu Lys Leu Leu  
275 280 285

<210> 24  
<211> 309  
<212> PRT  
<213> Mus musculus

<400> 24

Met Asp Glu Ser Ala Lys Thr Leu Pro Pro Pro Cys Leu Cys Phe Cys  
1 5 10 15

Ser Glu Lys Gly Glu Asp Met Lys Val Gly Tyr Asp Pro Ile Thr Pro  
20 25 30

Gln Lys Glu Glu Gly Ala Trp Phe Gly Ile Cys Arg Asp Gly Arg Leu  
35 40 45

Leu Ala Ala Thr Leu Leu Ala Leu Leu Ser Ser Ser Phe Thr Ala  
50 55 60

Met Ser Leu Tyr Gln Leu Ala Ala Leu Gln Ala Asp Leu Met Asn Leu  
65 70 75 80

Arg Met Glu Leu Gln Ser Tyr Arg Gly Ser Ala Thr Pro Ala Ala Ala  
85 90 95

Gly Ala Pro Glu Leu Thr Ala Gly Val Lys Leu Leu Thr Pro Ala Ala  
100 105 110

Pro Arg Pro His Asn Ser Ser Arg Gly His Arg Asn Arg Arg Ala Phe  
115 120 125

Gln Gly Pro Glu Glu Thr Glu Gln Asp Val Asp Leu Ser Ala Pro Pro  
130 135 140

Ala Pro Cys Leu Pro Gly Cys Arg His Ser Gln His Asp Asp Asn Gly  
145 150 155 160

Met Asn Leu Arg Asn Ile Ile Gln Asp Cys Leu Gln Leu Ile Ala Asp  
165 170 175

Ser Asp Thr Pro Thr Ile Arg Lys Gly Thr Tyr Thr Phe Val Pro Trp  
180 185 190

Leu Leu Ser Phe Lys Arg Gly Asn Ala Leu Glu Glu Lys Glu Asn Lys  
195 200 205

Ile Val Val Arg Gln Thr Gly Tyr Phe Phe Ile Tyr Ser Gln Val Leu  
210 215 220

Tyr Thr Asp Pro Ile Phe Ala Met Gly His Val Ile Gln Arg Lys Lys  
225 230 235 240

Val His Val Phe Gly Asp Glu Leu Ser Leu Val Thr Leu Phe Arg Cys  
245 250 255

Ile Gln Asn Met Pro Lys Thr Leu Pro Asn Asn Ser Cys Tyr Ser Ala  
260 265 270

Gly Ile Ala Arg Leu Glu Glu Gly Asp Glu Ile Gln Leu Ala Ile Pro  
275 280 285

Arg Glu Asn Ala Gln Ile Ser Arg Asn Gly Asp Asp Thr Phe Phe Gly  
290 295 300

Ala Leu Lys Leu Leu  
305

<210> 25  
<211> 250  
<212> PRT  
<213> Homo sapiens

<400> 25

Met Pro Ala Ser Ser Pro Phe Leu Leu Ala Pro Lys Gly Pro Pro Gly  
1 5 10 15

Asn Met Gly Gly Pro Val Arg Glu Pro Ala Leu Ser Val Ala Leu Trp  
20 25 30

Leu Ser Trp Gly Ala Ala Leu Gly Ala Val Ala Cys Ala Met Ala Leu  
35 40 45

Leu Thr Gln Gln Thr Glu Leu Gln Ser Leu Arg Arg Glu Val Ser Arg  
50 55 60

Leu Gln Gly Thr Gly Gly Pro Ser Gln Asn Gly Glu Gly Tyr Pro Trp  
65 70 75 80

Gln Ser Leu Pro Glu Gln Ser Ser Asp Ala Leu Glu Ala Trp Glu Asn  
85 90 95

Gly Glu Arg Ser Arg Lys Arg Arg Ala Val Leu Thr Gln Lys Gln Lys  
100 105 110

Lys Gln His Ser Val Leu His Leu Val Pro Ile Asn Ala Thr Ser Lys

115

120

125

Asp Asp Ser Asp Val Thr Glu Val Met Trp Gln Pro Ala Leu Arg Arg  
130 135 140

Gly Arg Gly Leu Gln Ala Gln Gly Tyr Gly Val Arg Ile Gln Asp Ala  
145 150 155 160

Gly Val Tyr Leu Leu Tyr Ser Gln Val Leu Phe Gln Asp Val Thr Phe  
165 170 175

Thr Met Gly Gln Val Val Ser Arg Glu Gly Gln Gly Arg Gln Glu Thr  
180 185 190

Leu Phe Arg Cys Ile Arg Ser Met Pro Ser His Pro Asp Arg Ala Tyr  
195 200 205

Asn Ser Cys Tyr Ser Ala Gly Val Phe His Leu His Gln Gly Asp Ile  
210 215 220

Leu Ser Val Ile Ile Pro Arg Ala Arg Ala Lys Leu Asn Leu Ser Pro  
225 230 235 240

His Gly Thr Phe Leu Gly Phe Val Lys Leu  
245 250

<210> 26  
<211> 240  
<212> PRT  
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<400> 26

Met Pro Ala Ser Ser Pro Gly His Met Gly Gly Ser Val Arg Glu Pro  
1 5 10 15

Ala Leu Ser Val Ala Leu Trp Leu Ser Trp Gly Ala Val Leu Gly Ala  
20 25 30

Val Thr Cys Ala Val Ala Leu Leu Ile Gln Gln Thr Glu Leu Gln Ser  
35 40 45

Leu Arg Arg Glu Val Ser Arg Leu Gln Arg Ser Gly Gly Pro Ser Gln  
50 55 60

Lys Gln Gly Glu Arg Pro Trp Gln Ser Leu Trp Glu Gln Ser Pro Asp  
65 70 75 80

Val Leu Glu Ala Trp Lys Asp Gly Ala Lys Ser Arg Arg Arg Ala  
85 90 95

Val Leu Thr Gln Lys His Lys Lys His Ser Val Leu His Leu Val  
100 105 110

Pro Val Asn Ile Thr Ser Lys Asp Ser Asp Val Thr Glu Val Met Trp  
115 120 125

Gln Pro Val Leu Arg Arg Gly Arg Gly Leu Glu Ala Gln Gly Asp Ile  
130 135 140

Val Arg Val Trp Asp Thr Gly Ile Tyr Leu Leu Tyr Ser Gln Val Leu  
145 150 155 160

Phe His Asp Val Thr Phe Thr Met Gly Gln Val Val Ser Arg Glu Gly  
165 170 175

Gln Gly Arg Arg Glu Thr Leu Phe Arg Cys Ile Arg Ser Met Pro Ser  
180 185 190

Asp Pro Asp Arg Ala Tyr Asn Ser Cys Tyr Ser Ala Gly Val Phe His  
195 200 205

Leu His Gln Gly Asp Ile Ile Thr Val Lys Ile Pro Arg Ala Asn Ala  
210 215 220

Lys Leu Ser Leu Ser Pro His Gly Thr Phe Leu Gly Phe Val Lys Leu  
225 230 235 240

<210> 27

<211> 11

<212> PRT

<213> Artificial Sequence

<220>

<223> MBP-Ac1-11 (a synthetic NH2-terminal peptide of Myelin Basic Protein)

<400> 27

Ala Ser Gln Lys Arg Pro Ser Gln Arg Ser Lys

1

5

10

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<210> 28
<211> 34
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthetic Sequence

<220>
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<222> (2)..(5)
<223> Xaa is any amino acid except cysteine

<220>
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<222> (7)..(7)
<223> Xaa is any amino acid except cysteine

<220>
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<222> (9)..(9)
<223> Xaa is any amino acid except cysteine

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<222> (11)..(11)
<223> Xaa is any amino acid residue except Ala and cysteine

<220>
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<223> Xaa is any amino acid except cysteine

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<223> Xaa is any amino acid except cysteine

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<223> Xaa is any amino acid except cysteine

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<223> Xaa is any amino acid except cysteine

<220>
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<223> Xaa is any amino acid except cysteine
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<400> 28

Cys Xaa Xaa Xaa Xaa Tyr Xaa Asp Xaa Leu Xaa Xaa Xaa Cys Lys Xaa  
1 5 10 15

Cys Xaa Xaa Arg Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa  
20 25 30

Xaa Cys

<210> 29

<211> 64

<212> PRT

<213> Artificial Sequence

<220>

<223> Z-domain of Staphylococcal protein A

<400> 29

Ala Gln His Asp Glu Ala Val Asp Asn Lys Phe Asn Lys Glu Gln Gln  
1 5 10 15

Asn Ala Phe Tyr Glu Ile Leu His Leu Pro Asn Leu Asn Glu Glu Gln  
20 25 30

Arg Asn Ala Phe Ile Gln Ser Leu Lys Asp Asp Pro Ser Gln Ser Ala  
35 40 45

Asn Leu Leu Ala Glu Ala Lys Lys Leu Asn Asp Ala Gln Ala Pro Lys  
50 55 60

<210> 30

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> MiniBR3

<400> 30

Thr Pro Cys Val Pro Ala Glu Cys Phe Asp Leu Leu Val Arg His Cys  
1 5 10 15

Val Ala Cys Gly Leu Leu Arg Thr Pro Arg  
20 25

<210> 31  
<211> 296  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> BCMA- (I22K) -Fc fusion

<400> 31

Met Ser Ala Leu Leu Ile Leu Ala Leu Val Gly Ala Ala Val Ala Ser  
1 5 10 15

Thr Ala Gly Gln Cys Ser Gln Asn Glu Tyr Phe Asp Ser Leu Leu His  
20 25 30

Ala Cys Lys Pro Cys Gln Leu Arg Cys Ser Ser Asn Thr Pro Pro Leu  
35 40 45

Thr Cys Gln Arg Tyr Cys Asn Ala Ser Val Thr Asn Ser Val Lys Gly  
50 55 60

Val Thr Asp Lys Ala Ala His Tyr Thr Leu Cys Pro Pro Cys Pro Ala  
65 70 75 80

Pro Glu Leu Leu Gly Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro  
85 90 95

Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val  
100 105 110

Val Asp Val Ser His Glu Asp Pro Glu Val Lys Phe Asn Trp Tyr Val  
115 120 125

Asp Gly Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln  
130 135 140

Tyr Asn Ser Thr Tyr Arg Val Val Ser Val Leu Thr Val Leu His Gln  
145 150 155 160

Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Ala  
165 170 175

Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser Lys Ala Lys Gly Gln Pro  
180 185 190

Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr  
195 200 205

Lys Asn Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser  
210 215 220

Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr  
225 230 235 240

Lys Thr Thr Pro Pro Val Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr  
245 250 255

Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe  
260 265 270

Ser Cys Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys  
275 280 285

Ser Leu Ser Leu Ser Pro Gly Lys  
290 295

<210> 32  
<211> 14  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> peptide epitope

<400> 32

Met Ala Asp Pro Asn Arg Phe Arg Gly Lys Asp Leu Gly Gly  
1 5 10

<210> 33  
<211> 34  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> Synthetic Sequence

<220>  
<221> MISC\_FEATURE  
<222> (2)..(5)  
<223> Xaa is any amino acid except cysteine; and provided that the

synthetic sequence does not comprise the sequence  
CSQNEYFDSLLHACIPCQLRCSSNTPPLTCQRYC

<220>  
<221> MISC\_FEATURE  
<222> (6)..(6)  
<223> Xaa is selected from the group consisting of Tyr, Ala, Asp, Ser and Phe

<220>  
<221> MISC\_FEATURE  
<222> (7)..(7)  
<223> Xaa is any amino acid except cysteine; and provided that the synthetic sequence does not comprise the sequence  
CSQNEYFDSLLHACIPCQLRCSSNTPPLTCQRYC

<220>  
<221> MISC\_FEATURE  
<222> (9)..(9)  
<223> Xaa is any amino acid except cysteine; and provided that the synthetic sequence does not comprise the sequence  
CSQNEYFDSLLHACIPCQLRCSSNTPPLTCQRYC

<220>  
<221> MISC\_FEATURE  
<222> (11)..(11)  
<223> Xaa is any amino acid residue except Ala

<220>  
<221> MISC\_FEATURE  
<222> (12)..(13)  
<223> Xaa is any amino acid except cysteine; and provided that the synthetic sequence does not comprise the sequence  
CSQNEYFDSLLHACIPCQLRCSSNTPPLTCQRYC

<220>  
<221> MISC\_FEATURE  
<222> (15)..(15)  
<223> Xaa is any amino acid residue except Ala or Lys

<220>  
<221> MISC\_FEATURE  
<222> (16)..(16)  
<223> Xaa is any amino acid except cysteine; and provided that the synthetic sequence does not comprise the sequence  
CSQNEYFDSLLHACIPCQLRCSSNTPPLTCQRYC

<220>  
<221> MISC\_FEATURE  
<222> (18)..(18)  
<223> Xaa is Asp

<220>  
<221> MISC\_FEATURE  
<222> (19)..(19)  
<223> Xaa is any amino acid except cysteine; and provided that the synthetic sequence does not comprise the sequence

CSQNEYFDSLLHACIPCQLRCSSNTPPLTCQRYC

<220>  
<221> MISC\_FEATURE  
<222> (20)..(20)  
<223> Xaa is Tyr

<220>  
<221> MISC\_FEATURE  
<222> (22)..(29)  
<223> Xaa is any amino acid except cysteine; and provided that the synthetic sequence does not comprise the sequence  
CSQNEYFDSLLHACIPCQLRCSSNTPPLTCQRYC

<220>  
<221> MISC\_FEATURE  
<222> (31)..(33)  
<223> Xaa is any amino acid except cysteine; and provided that the synthetic sequence does not comprise the sequence  
CSQNEYFDSLLHACIPCQLRCSSNTPPLTCQRYC

<400> 33

Cys Xaa Xaa Xaa Xaa Xaa Xaa Asp Xaa Leu Xaa Xaa Xaa Cys Xaa Xaa  
1 5 10 15

Cys Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa  
20 25 30

Xaa Cys